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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/721,504

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Franck Le

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EXAMINER

HENNING, MATTHEW T

ART UNIT

PAPER NUMBER

2431

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06/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/721,504	Applicant(s) LE ET AL.	
	Examiner MATTHEW T. HENNING	Art Unit 2431	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-15,18,42-64 and 66-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-15,18,42-64 and 66-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1 This action is in response to the communication filed on 3/16/2009.

2 **DETAILED ACTION**

3 *Response to Arguments*

4 Applicant's arguments filed 3/16/2009 have been fully considered but they are not
5 persuasive.

6 Regarding the applicants' argument that the header of the packet of Gupta does not
7 contain "all" of the generated validity information necessary to perform the validity check, the
8 examiner still does not find this argument persuasive. The applicants' use the language "all
9 necessary information required for performing a validity check" throughout the specification. In
10 order to remain consistent with the specification, the examiner has looked to the instant
11 specification in order to interpret the usage of this language, for the purposes of searching and
12 applying prior art. The specification provides evidence that this limitation means "all necessary
13 information required for performing a validity check **without the checking entity needing to**
14 **further communicate with the sending network node**", as the specification clearly shows that
15 the checking node does not require further communication with the sending node in order to
16 perform the validity checking, but that the checking entity may need to receive additional
17 information from somewhere (i.e. a certificate authority) in order to perform the validity
18 checking. As such, if Gupta disclosed that the key was retrieved from the DNS server, or that
19 the algorithm to perform the verification was known by the verifier, this would still fall within
20 the scope of the language, in light of the specification. Therefore, the examiner does not find the
21 argument persuasive.

1 Regarding the applicants' argument that Gupta does not disclose that "no pre-established
2 security association is needed to verify the packet" because the sender has the key before the
3 verification is performed, the examiner does not find the argument persuasive. The instant
4 specification paragraph 0054 further states, with regards to the lack of pre-established security
5 association, that "the nodes do not need to have any pre-established [security association], or
6 have to exchange key values beforehand". The fact that the keys were generated before the
7 fingerprint is encrypted at the sender does not mean there was a pre-established security
8 association between the communicating nodes. In fact, Fig. 7 of Gupta shows that the recipient
9 node does not necessarily have the key before the communication. Furthermore, the instant
10 specification paragraph 0004 indicates that a security association is part of IPSec, but Gupta does
11 not disclose the use of IPSec, and that the security association is "a set of policy and key(s) used
12 to protect information". Gupta does not disclose such security association existing before the
13 communication. As such, the examiner does not find the argument persuasive.

14 Regarding the applicants' argument, with respect to previous claim 5 which is now
15 incorporated into the independent claims, that Gupta did not disclose wherein the algorithm
16 information comprises values to initialize an algorithm to be used to perform the validity check
17 of the packet, the examiner does not find the argument persuasive. The applicants appear to
18 believe that the claim language requires that the algorithm itself or an indication of what
19 algorithm should be used be included in the validity information. However, this is not the case.
20 Rather, the claim language requires that values to initialize an algorithm be included in the
21 validity information. To initialize is to assign an initial value. In other words, the claim
22 requires that an initial value be input to the algorithm. Col. 7 Paragraph 2 clearly shows that the

1 encrypted signature is decrypted. In order for this to occur, the encrypted signature must
2 "initialize" the decryption algorithm. As such, the examiner does not find the argument
3 persuasive.

4 Further, rather than claiming what the invention is not, the examiner suggests that the
5 applicants carefully consider the meets and bounds of their invention, and then carefully
6 construct positive claim limitations which accurately define that scope. For example, if the
7 applicants believe that it is important to their invention that the algorithm and key used for
8 verification is provided in the header of the packet, then the applicants should particularly point
9 that out in the claim language.

10 The examiner has maintained the prior art rejections previously set forth.

11 All objections and rejections not set forth below have been withdrawn.

12 Claims 1,2,4,6-15,18,42-64 and 66-68 have been examined.

13 ***Information Disclosure Statement***

14 The information disclosure statement(s) (IDS) submitted on 3/16/2009 are in compliance
15 with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information
16 disclosure statements.

17 ***Claim Objections***

18 Claim 18 is objected to because of the following informalities: Claim 18 has two
19 terminating periods. Appropriate correction is required.

20
21 ***Claim Rejections - 35 USC § 102***

1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
2 basis for the rejections under this section made in this Office action:

3 *A person shall be entitled to a patent unless –*
4 *(b) the invention was patented or described in a printed publication in this or a foreign*
5 *country or in public use or on sale in this country, more than one year prior to the date of*
6 *application for patent in the United States.*
7

8 Claims 1-2, 6-10, 15, 18, 42-43, 45-49, 54-56, 58-60, and 62-64, and 66-68 are rejected
9 under 35 U.S.C. 102(b) as being anticipated by Gupta et al. (US Patent Number 6,389,532)
10 hereinafter referred to as Gupta.

11 Regarding claims 1 and 66, Gupta disclosed a method (See Gupta Fig. 1 Element 104,
12 108 or 112), comprising the steps of: generating validity information for a packet (See Gupta
13 Figs. 5-6 and Col. 6 Paragraphs 2-4), wherein the validity information comprises all necessary
14 information required to perform a validity check of the packet (See Gupta Fig 7 and Col. 6
15 Paragraph 5 - Col. 7 Paragraph 2); the validity information comprising algorithm information to
16 be used for performing the validity check of the packet and no pre-established security
17 association is needed to verify the packet (See Gupta Fig. 3 and Col. 6 Paragraphs 3-4);
18 generating a packet header (302), comprising the validity information (See Gupta Fig. 3 and Col.
19 6 Paragraphs 3-4) and comprising generating the algorithm information comprises generating of
20 the algorithm information which comprises values to initialize an algorithm to be used to
21 perform the validity check of the packet (See Gupta Col. 6 Paragraphs 3-4, the data, the key
22 index, the signature, or the fingerprint, for example); and sending the packet including the header
23 from a first network node to a second network node (See Gupta Col. 6 Paragraph 4).

24 Regarding claim 18, Gupta disclosed an apparatus comprising: validity information

1 generating means for generating validity information for a packet (See Gupta Figs. 5-6 and Col.
2 6 Paragraphs 2-4); packet header generating means for generating a header for the packet,
3 comprising the validity information (See Gupta Fig. 3 and Col. 6 Paragraphs 3-4); and sending
4 means for sending the packet including the header to a receiving network node (See Gupta Col. 6
5 Paragraph 4), wherein the validity information comprises all necessary information required for
6 performing a validity check of the packet and no pre-established security association is needed to
7 verify the packet (See Gupta Fig 7 and Col. 6 Paragraph 5 - Col. 7 Paragraph 2) and the validity
8 information comprises algorithm information to be used for performing the validity check of the
9 packet (See Gupta Col. 6 Paragraphs 3-4), wherein the algorithm information comprises values
10 to initialize an algorithm to be used to perform the validity check of the packet (See Gupta Col. 6
11 Paragraphs 3-4, the data, the key index, the signature, or the fingerprint, for example).

12 Regarding claim 42, Gupta disclosed an apparatus, comprising: a validity information
13 generator configured to generate validity information for a packet (See Gupta Figs. 5-6 and Col.
14 6 Paragraphs 2-4); a packet header generator configured to generate a header for the packet,
15 comprising the validity information (See Gupta Fig. 3 and Col. 6 Paragraphs 3-4); and a
16 transmitter configured to send the packet including the header to a receiving network node (See
17 Gupta Col. 6 Paragraph 4), wherein the validity information comprises all necessary information
18 required to perform a validity check of the packet and no pre-established security association is
19 needed to verify the packet, and the validity information comprises algorithm information to be
20 used to perform the validity check of the packet (See Gupta Fig 7 and Col. 6 Paragraph 3 - Col. 7
21 Paragraph 2), wherein the algorithm information comprises values to initialize an algorithm to be

1 used to perform the validity check of the packet (See Gupta Col. 6 Paragraphs 3-4, the data, the
2 key index, the signature, or the fingerprint, for example).

3 Regarding claim 55, Gupta disclosed an apparatus, comprising: a receiver configured to
4 receive packets from a sending network node (See Gupta Fig. 1 Element 108, Fig. 7 and Col. 6
5 Paragraph 5); and a checker configured to perform a validity check of a packet by referring to
6 validity information contained in a header of the packet and no pre-established security
7 association is needed to verify the packet (See Gupta Fig. 7 and Col. 7 Paragraph 2), wherein the
8 validity information comprises all necessary information required to perform the validity check
9 of the packet (See Gupta Fig 7 and Col. 6 Paragraph 5 - Col. 7 Paragraph 2), and the validity
10 information comprises algorithm information to be used to perform the validity check of the
11 packet (See Gupta Col. 6 Paragraphs 3-4), wherein the algorithm information comprises values
12 to initialize an algorithm to be used to perform the validity check of the packet (See Gupta Col. 6
13 Paragraphs 3-4, the data, the key index, the signature, or the fingerprint, for example).

14 Regarding claim 59, Gupta disclosed an apparatus, comprising: a transmitter configured
15 to forward packets from a sending network node to a receiving network node (See Gupta Fig. 7
16 and Col. 6 Paragraph 5); and a checker configured to perform a validity check of a packet by
17 referring to validity information contained in a header of the packet (See Gupta Fig. 7 and Col. 7
18 Paragraph 2), wherein the validity information comprises all necessary information required to
19 perform a validity check of the packet and no pre-established security association is needed to
20 verify the packet (See Gupta Fig 7 and Col. 6 Paragraph 5 - Col. 7 Paragraph 2), and the validity
21 information comprises algorithm information to be used to perform the validity check of the
22 packet (See Gupta Col. 6 Paragraphs 3-4), wherein the algorithm information comprises values

1 to initialize an algorithm to be used to perform the validity check of the packet (See Gupta Col. 6
2 Paragraphs 3-4, the data, the key index, the signature, or the fingerprint, for example).

3 Regarding claims 63 and 67, Gupta disclosed a method comprising: receiving packets
4 (See Gupta Fig 7 and Col. 6 Paragraph 5 - Col. 7 Paragraph 2); and performing a validity check
5 of a packet by referring to validity information contained in a header of the packet (See Gupta
6 Fig. 7 and Col. 7 Paragraph 2), wherein the validity information comprises all necessary
7 information required for performing the validity check of the packet and no pre-established
8 security association is needed to verify the packet, the validity information comprising algorithm
9 information to be used for performing the validity check of the packet (See Gupta Fig 7 and Col.
10 6 Paragraph 3 - Col. 7 Paragraph 2), wherein the algorithm information comprises values to
11 initialize an algorithm to be used to perform the validity check of the packet (See Gupta Col. 6
12 Paragraphs 3-4, the data, the key index, the signature, or the fingerprint, for example).

13 Regarding claims 64 and 68, Gupta disclosed a method comprising: forwarding received
14 packets (Gupta Col. 7 Paragraph 2); and performing means for performing a validity check of a
15 packet by referring to validity information contained in a header of the packet (Gupta Col. 7
16 Paragraph 2), wherein the validity information comprises all necessary information required for
17 performing a validity check of the packet and no pre-established security association is needed to
18 verify the packet, the validity information comprising algorithm information to be used for
19 performing the validity check of the packet (See Gupta Fig 7 and Col. 6 Paragraph 3 - Col. 7
20 Paragraph 2), wherein the algorithm information comprises values to initialize an algorithm to be
21 used to perform the validity check of the packet (See Gupta Col. 6 Paragraphs 3-4, the data, the
22 key index, the signature, or the fingerprint, for example).

1 Regarding claims 2, 43, 56 and 60, Gupta disclosed that the generating of the validity
2 information comprises generating security information indicating security services applied to the
3 packet (See Gupta Col. 5 Paragraph 7).

4 Regarding claims 6, 45, 58, and 62, Gupta disclosed that the generating of the validity
5 information comprises generating public key information of a sending node (See Gupta Col. 6
6 Paragraphs 2-6, for example the public and private key pair, or the key index).

7 Regarding claims 7, and 46 Gupta disclosed that the generating of the public key
8 information comprises generating reference information related to how a public key can be
9 obtained (See Gupta Col. 6 Paragraphs 3-4 and Col. 7 Paragraph 2).

10 Regarding claims 8, and 47, Gupta disclosed that the generating of the reference
11 information comprises generating an identity of an entity from which the public key can be
12 obtained (See Gupta Col. 6 Paragraphs 3-4, Col. 7 Paragraph 2, and Col. 3 Line 64 – Col. 4 Line
13 13, wherein the index is the identity, and the entry in the table is the entity).

14 Regarding claims 9, and 48, Gupta disclosed that the generating of the reference
15 information comprises generating a public key identifier for the public key (See Gupta Col. 6
16 Paragraphs 3-4 and Col. 7 Paragraph 2, the key index).

17 Regarding claim 10, and 49, Gupta disclosed that the generating of the public key
18 information comprises generating the public key (See Gupta Col. 6 Paragraph 2).

19 Regarding claim 15 and 54, Gupta disclosed signing the packet using a private key
20 corresponding to a public key indicated by the validity information in the packet header in a
21 sending network node (See Gupta Col. 6 Paragraph 4).

22

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 12-14, 44, 51-53, 57, and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta as applied to claims 1, 18, 19, and 20 above, and further in view of Naudus (US Patent Number 6,202,081).

Regarding claims 12-14, and 51-53, Gupta disclosed validation of packets, but failed to disclose that the step of generating the validity information comprises generating an information item for preventing replay attacks.

Naudus teaches that in a packet filtering system, packets should include timestamps in order to prevent replay attacks. Naudus further teaches that “[r]eplay attacks occur when a malicious user gains access to a router or other network device on a computer network that is forwarding data packets. Legitimate data packets are intercepted and then re-sent at a later time to allow the malicious user to appear as a legitimate user. A firewall helps prevent replay attacks by checking a time-stamp in the data packet that prevents the data packets from being re-sent at a later time.” (See Naudus Col. 2 Paragraph 4).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Naudus in the packet validity checking system of Gupta by

1 including a timestamp in each packet and verifying the timestamp at the validity checker. This
2 would have been obvious because the ordinary person skilled in the art would have been
3 motivated to prevent replay attacks in the network. In this combination, the inclusion of a
4 timestamp in each packet, in itself, is an indication of a procedure to be used for anti replay
5 attacks.

6 Regarding claims 4, 44, 57, and 61, Gupta did not specifically teach that the step of
7 generating the algorithm information comprises generating the algorithm information which
8 indicates an algorithm to be used for performing the validity check of the packet. However, as
9 taught by Naudus, in Col. 6 Line 60 - Col. 7 Line 7, it is well known to include in the packet
10 header, an identification of which algorithm was used to sign the packet. As such, it would have
11 been obvious to have included this information within the packet. Furthermore, the ordinary
12 person skilled in the art at the time of invention would have recognized that this would allow for
13 the user of a multiplicity of signature algorithms, as well as allowing updating of the signature
14 algorithms in the future, and therefore it would have been obvious to have included an indication
15 of the signature algorithm in the packet.

16 Claims 11, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta
17 as applied to claims 6 and 23 above, and further in view of Nikander (US Patent Number
18 7,155,500).

19 Gupta disclosed including public key information within the packets, but failed to
20 specifically disclose including the public key itself within the packets or that the step of
21 generating the public key information comprises generating public key verification information
22 indicating information in order to verify that the public key actually belongs to the sending node.

1 Gupta did disclose that the public and private key pairs can be generated and stored in a
2 certification server (See Col. 4 Paragraph 2).

3 Nikander teaches that by including a public key itself and the certificate of the public key,
4 the receiving host can verify that the public key is truly owned by the sender (See Nikander Col.
5 10 Line 50 – Col. 12 Line 9).

6 It would have been obvious to the ordinary person skilled in the art at the time of
7 invention to employ the teachings of Nikander in the packet verification system of Gupta by
8 including the public key and public key certificate within each packet and verifying that the
9 sender of each packet owned the public key used to sign the packet. This would have been
10 obvious because the ordinary person skilled in the art would have been motivated to ensure that a
11 malicious node was not claiming to be a different node.

12 ***Conclusion***

13 Claims 1-2, 4, 6-15, 18, 42-64, and 66-68 have been rejected.

14 **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
15 policy as set forth in 37 CFR 1.136(a).

16 A shortened statutory period for reply to this final action is set to expire THREE
17 MONTHS from the mailing date of this action. In the event a first reply is filed within TWO
18 MONTHS of the mailing date of this final action and the advisory action is not mailed until after
19 the end of the THREE-MONTH shortened statutory period, then the shortened statutory period
20 will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
21 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

1 however, will the statutory period for reply expire later than SIX MONTHS from the mailing
2 date of this final action.

3 Any inquiry concerning this communication or earlier communications from the
4 examiner should be directed to MATTHEW T. HENNING whose telephone number is
5 (571)272-3790. The examiner can normally be reached on M-F 8-4.

6 If attempts to reach the examiner by telephone are unsuccessful, the examiner's
7 supervisor, William Korzuch can be reached on (571)272-7589. The fax phone number for the
8 organization where this application or proceeding is assigned is 571-273-8300.

9 Information regarding the status of an application may be obtained from the Patent
10 Application Information Retrieval (PAIR) system. Status information for published applications
11 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
12 applications is available through Private PAIR only. For more information about the PAIR
13 system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR
14 system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would
15 like assistance from a USPTO Customer Service Representative or access to the automated
16 information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

17
18
19 /Matthew T Henning/
20 Examiner, Art Unit 2431
21